Licensing Opportunity

ANSER – AN ALGORITHM FOR NEONATAL SEIZURE RECOGNITION

Clinicians caring for neonates affected by seizures are poorly supported by specialist neurophysiology, especially out-of-hours, and there is an urgent unmet need for an intelligent cot-side seizure support tool. The ANSeR project team has developed a patented method for the real-time identification of seizures in an EEG signal that will automatically monitor the brain function of these babies and alert the clinician if there is a problem.

VALUE PROPOSITION

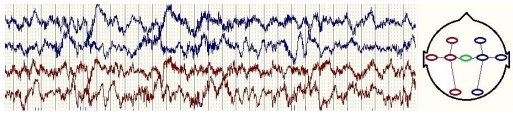
It is very difficult to detect seizures in neonates as they do not always exhibit obvious behavioral changes during a seizure. Neonatal ICU experts agree that there is a pressing need to develop clinically robust automated methods of seizure detection which can provide information in a readily interpretable form in real time at the cot-side. The ANSeR team has developed an algorithm for the real-time identification of seizures in an Electroencephalogram (EEG) signal that can monitor EEG outputs in real time, telling doctors when seizures happen, how long they last and how often they occur. This allows physicians to administer appropriate drugs at the appropriate time. The new algorithm is compatible with existing infant EEGs.

THE TECHNOLOGY

The ANSeR algorithm segments the EEG into sequential epochs from which a feature vector is extracted. The vectors are passed through a multi-patient trained generic Support Vector Machine (SVM) classifier. Aggregation of these outputs allows robust seizure classification accuracy and has demonstrated significantly improved performance over previous methods, with an increase in the number of correctly detected seizures and a reduction in false alarms.

The ANSeR algorithm and associated recording and review software is fully validated for clinical use. It is compatible with Full Montage EEG (11-20 electrodes), aEEG (2-4 electrodes), and Patient Monitors (2-4 electrodes). A Phase 1 observational study comparing offline EEG analysis supported by the algorithm with analysis by skilled clinicians is nearing completion. A phase 2 trial where a real-time evaluation of the algorithm will be conducted is anticipated to complete in mid-2016.

ANSeR
Algorithm for Neonatal Seizure Recognition



Selected references:

1. WO2010115939; "A method for the real-time identification of seizures in an electroencephalogram (EEG) signal."

DEVELOPMENT STATUS

- Phase 1 clinical studies

FIELD OF APPLICATION

- Seizure detection in Nenonatal EEG

CONTACT

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